

REMARKS/ARGUMENTS

The following remarks are responsive to the points raised by the Office Action dated August 8, 2006 ("the Office Action"). In view of the following remarks, reconsideration is respectfully requested.

Claims 1-4 and 6-13 remain pending.

Claims 1-4, 6-8 and 13 were provisionally rejected under the doctrine of obviousness-type double patenting as unpatentable over claims 64-66 and 73-75 of co-pending Application No. 10/926,321 to Sakurai et al.

Claim 1 was provisionally rejected under the doctrine of obviousness-type double patenting as unpatentable over claim 21 of co-pending Application No. 10/932,319 to Sakurai et al.

Because these double patenting rejections are only provisional, Applicants decline to address them here. The Office Action indicated that these double patenting rejections are still held in abeyance.

Claims 1-4 and 6-13 were rejected under 35 U.S.C. § 103 as unpatentable over JP 2002-060691 to Hayashi (hereinafter, "Hayashi") in view of JP 2001-098218 to Nobe (hereinafter, "Nobe").

This rejection is respectfully traversed.

Amended claim 1 describes a method of forming a film that includes three heat treatments. In the first heat treatment, the solvent is evaporated from the film-forming composition. In the second heat treatment, polymerization of polysiloxane is promoted in an inert-gas atmosphere. In the third heat treatment, the pore-forming agent is vaporized in an oxidizing-gas ambient *at a temperature that is lower than the temperature of the polymerization-promoting second heat treatment*.

According to the Office Action, *prima facie* obviousness has been established because the prior art teaches vaporization and polymerization heat treatment steps in which the temperatures are the same. Therefore, according this reasoning, one of ordinary skill in the art would expect that the same material will be obtained upon vaporizing the pore forming agent at a temperature that is slightly lower than the temperature of the polymerization as compared to the material obtained when the vaporizing and polymerization temperatures are the same. The Office Action cites *Titanium Metals Corp. of America v. Banner*, 227 USPQ 773 (Fed. Cir. 1985) for the proposition that *prima facie* obviousness is established where

the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to produce materials having the same properties.

Titanium Metals is inapplicable to the present case. The holding with respect to obviousness in *Titanium Metals* involved a claim to a product, i.e., a claim to a titanium base alloy having 0.8% nickel, 0.3% molybdenum, up to 0.1% maximum iron, and the balance titanium. *Titanium Metals*, 227 USPQ at 774. The prior art disclosed two alloys, one having 0.25% Mo – 0.75% Ni and the other having 0.31% Mo – 0.94% Ni. *Titanium Metals*, 227 USPQ at 779. The court held that because the proportions of the metals are so close, *prima facie*, one skilled in the art would have expected them to have the same properties. *Titanium Metals*, 227 USPQ at 779.

Contrary to *Titanium Metals*, the present case involves claims to a method, not claims to a product. *Titanium Metals* reasons that products having proportions of ingredients very close to those found in known products would, without contrary evidence, be expected to have the same properties as the known products. This reasoning is inapplicable to the present claims because the Applicants are not claiming products, they are claiming methods. That the products of a claimed method and a prior art method may be similar is of no import in determining the obviousness of method claims. The patentability of method claims is determined by comparing the method that is claimed to prior art methods, not by comparing the product that is made by the claimed method to the product produced by the prior art method. Accordingly, *Titanium Metals* is inapposite.

Even assuming, *arguendo*, that *Titanium Metals* is applicable to the present case, the product made by the claimed methods would differ from that which would be made by the asserted combination of Hayashi and Nobe. As explained in the specification, conventional methods decompose the pore-forming agent at a temperature that is higher than the temperature at which polysiloxane is cured. However, heat treatment at such a high temperature compromises the reliability of the copper wiring. Therefore, there is a need to lower both the vaporization temperature of the pore-forming agent and the polymerization temperature. However, if the polymerization temperature is lowered, a large quantity of the pore-forming agent may remain in the film because the pore-forming agent is not sufficiently vaporized, lowering the porosity of the film and compromising the dielectric constant of the film (specification, page 2, lines 5-30).

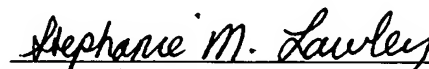
The claimed method solves this quandary by vaporizing the pore-forming agent in a third heat treatment at a temperature that is lower than the temperature of the polymerization-promoting second heat treatment, maintaining the integrity of the copper wiring, the desired porosity of the film, and dielectric constant of the film. Unlike the product obtained by the claimed methods, the product obtained by the purported combination of Nobe and Hayashi would have a compromised dielectric constant because the pore-forming agent would not be vaporized at a temperature that is lower than the temperature of the polymerization. In other words, the product obtained by the claimed method would be different from the product obtained by the hypothetical combination of Hayashi and Nobe. Therefore, even if the reasoning of *Titanium Metals* were applied, obviousness would not be established because the products of the claimed and prior art methods are different.

Because independent claim 1 is allowable for the reasons set forth above, dependent claims 2-4, 6-8 and 13 are also allowable since they depend from patentable amended claim 1.

For the reasons set forth above, reconsideration of the rejections is respectfully requested.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



Stephanie M. Lawley, Reg. No. 55362
LEYDIG, VOIT & MAYER
700 Thirteenth Street, N.W., Suite 300
Washington, DC 20005-3960
(202) 737-6770 (telephone)
(202) 737-6776 (facsimile)

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